

Model Code Provisions

Urban Streets & Subdivisions



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Introduction

This document provides communities with information and ideas to enable them to rediscover and reestablish forms of urban development that have been little used during the past 50 years. Many cities and towns throughout the state have subdivisions and streets that were developed in the decades between 1880 and 1940. These are characterized by small lots occupied by small houses, narrow streets lined with sidewalks and trees, and various types of neighborhood green spaces.

Frequently, the street pattern is based on a grid or “modified” grid. The former features a rectilinear arrangement of streets and blocks, regardless of any intervening topographic or geographic features. The latter involves an interruption of the grid where steep hills, stands of vegetation, or other features are considered worthy of protecting or recognizing. These two methods still remain useful, but the modified grid can also contain diagonal streets, axial streets, curved streets, and other arrangements to emphasize important landmarks and buildings, to protect environmental features, to reinforce views, or to create drama.

The standards and provisions contained in this document are not provided in a manner that allows for simple photocopying. All regulations need to be tailored to the particular needs and characteristics of a community. An

overall structure is provided, together with types of streets and subdivisions, so that an ordinance can more easily be assembled. We have also included references for sources of information. Selected ordinances and design guidelines from other communities are available from the Department of Community, Trade and Economic Development.

Model Code Provisions, Urban Streets and Subdivisions, will assist communities in fulfilling the goals of the Growth Management Act. Specific goals addressed are goals that encourage:

- Development in urban areas where adequate services exist or can be provided in an efficient manner.
- An efficient variety of transportation systems.
- The availability of a variety of residential densities and housing types for all economic segments of the population.

One strategy for achieving these goals is to infill existing urban areas and build new urban communities at higher densities. This strategy promotes more economical delivery of urban services. It makes alternatives to the single-occupancy automobile such as walking, biking, and transit more feasible. The concepts outlined in this publication will help communities achieve these higher densities and build attractive, affordable, and livable communities.

I. Urban Streets

A. State Law

Washington state law requires that all jurisdictions adhere to the provisions of Title 35 of the Revised Code of Washington (RCW) Chapter 35.78 entitled Streets Classification and Design Standards. Under this law, jurisdictions are to adopt uniform standards for major arterial streets and secondary arterial streets. The city engineer shall approve deviations from any standards. The law does not specifically address the smaller, more localized type of street suggested by this document. However, it should be recognized that the types of streets described have not commonly been developed for a number of decades. Heretofore, city engineers have relied upon standards provided by the Washington State Department of Transportation. This document should be viewed as supplementing other provisions, so that a greater range of street types can occur in urban areas.

B. The Purpose of These Model Code Provisions

The standards suggested in this document are intended to accomplish several objectives related to the form, functioning, and appearance of communities. These are:

To Help Implement Community Plans

Most communities have adopted policies that address transportation and circulation. These standards provide specific ways to implement policies that address multi-modal transportation needs, especially related to pedestrian movement.

To Emphasize Pedestrians, Transit, and Bicycle Use

According to both growth management legislation and federal guidelines, communities should be encouraging methods of

transportation that allow for easy, convenient, and comfortable movement by modes in addition to the single-occupant vehicle. The standards focus upon street environments that are supportive of a wider range of choices.

To Provide for Connectivity Between Parts of a Community

Standards commonly used in recent decades have emphasized the separation of neighborhoods through a rigid hierarchy of streets. As a result, there are relatively few choices in travel, resulting in heavy loads being concentrated on a few major streets. These standards suggest a return to the more traditional method used in American cities where a grid system (or a modified grid system) allowed for neighborhoods to be linked together with many routes of travel being available.

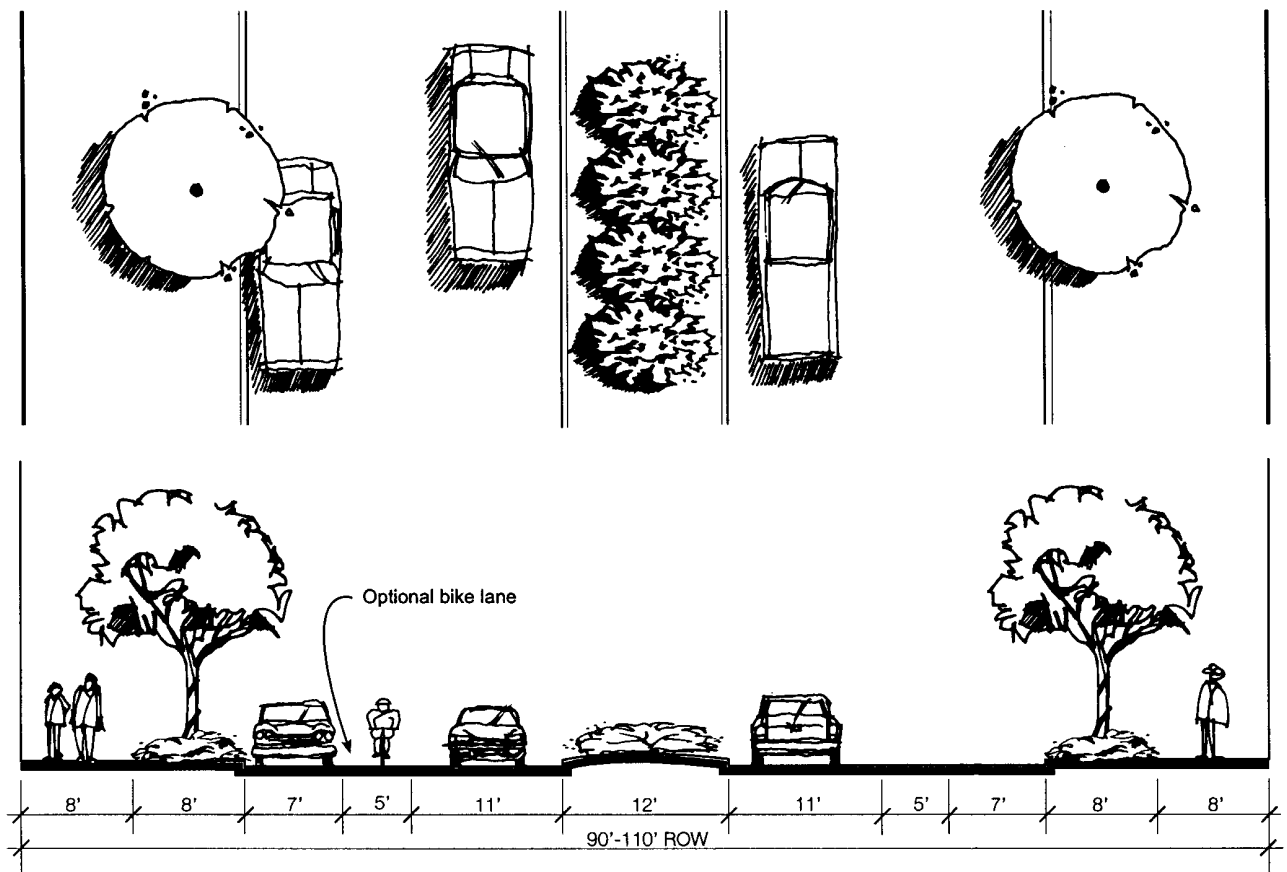
To Strengthen Neighborhoods

In the recent past, streets have often divided neighborhoods. These standards suggest street patterns that are building blocks for tighter, more integrated neighborhoods.

C. Relationship to Other Standards

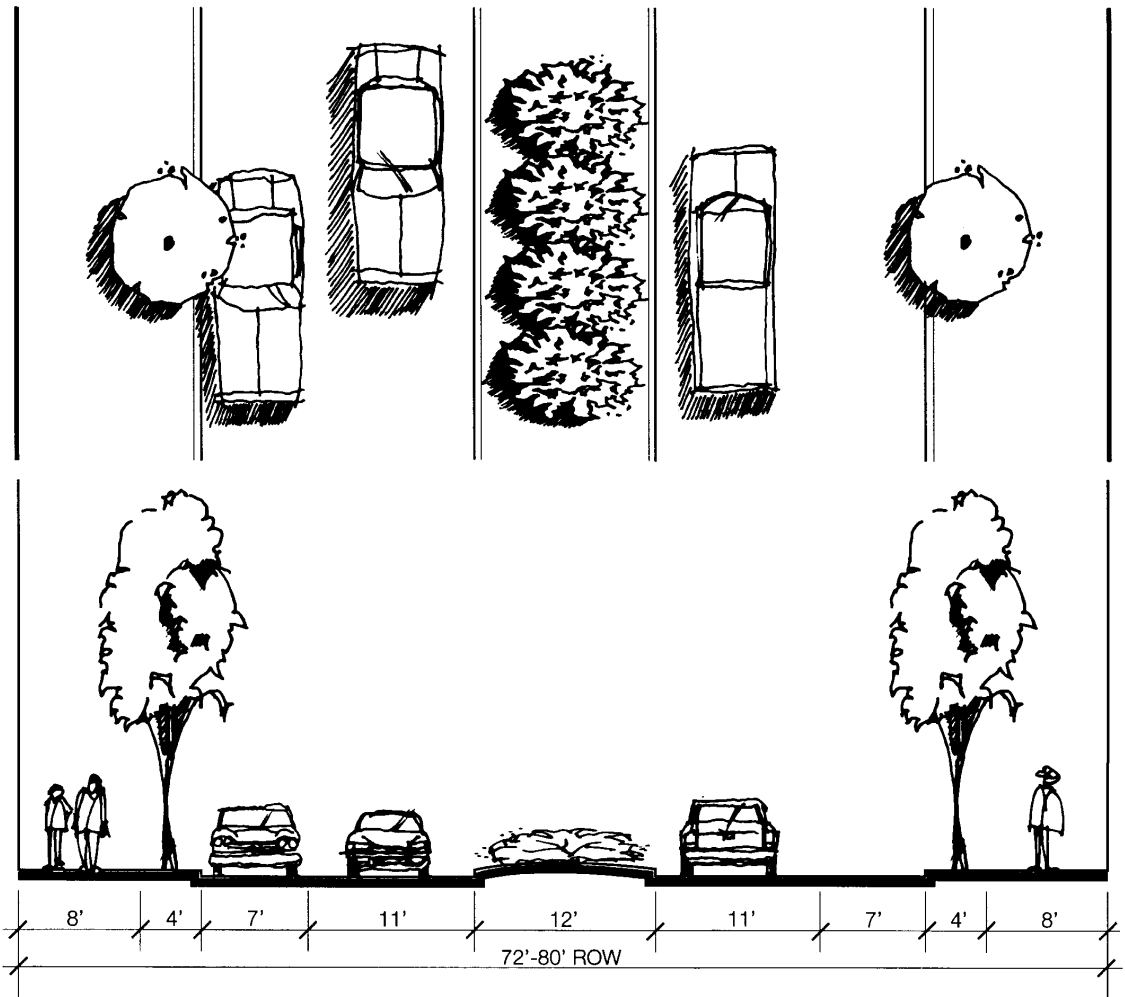
Many communities have sets of standards that govern public streets and sidewalks. Others rely upon national standards set by professional organizations. Most of those standards, however, address streets intended to carry substantial volumes and speeds of vehicles. The streets envisioned in this document are more local in nature. It is expected that the concepts and standards described here will need to be adopted by individual jurisdictions.

D. Urban Street Types



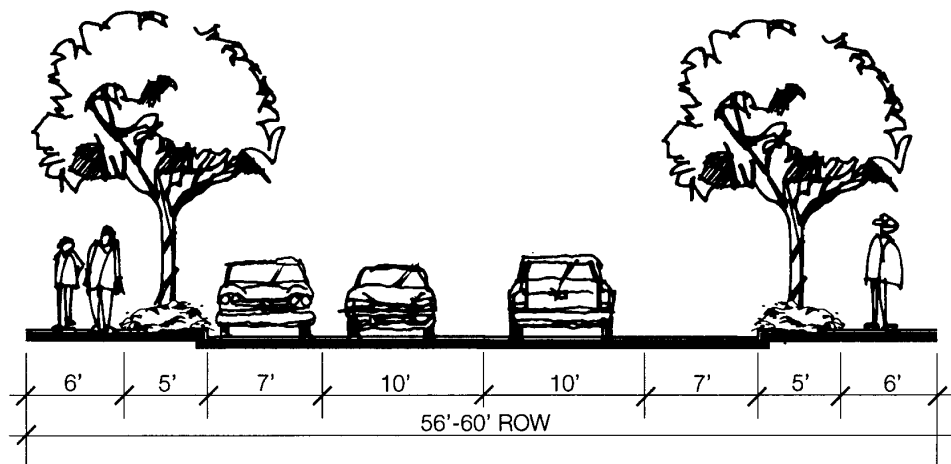
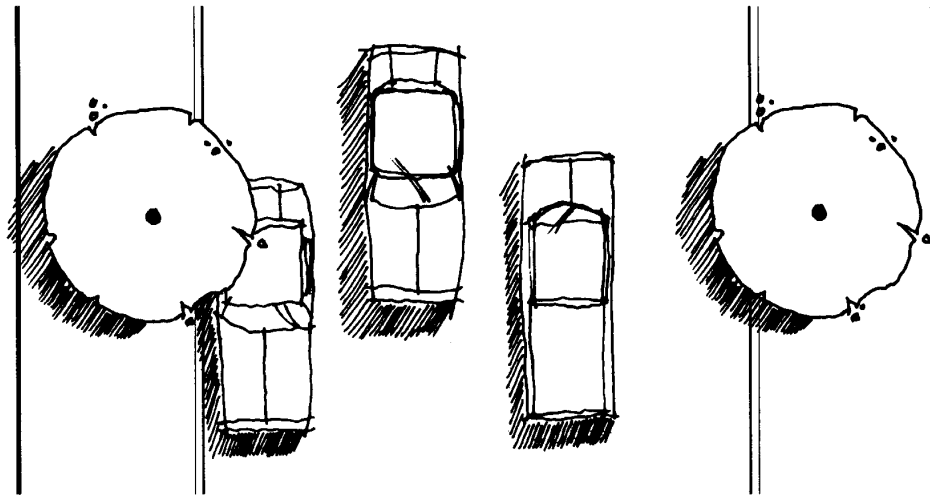
Neighborhood Boulevard

This street is intended to link together a series of residential neighborhoods. Neighborhood boulevards often connect to commercial or employment centers. They may have housing of various densities lining them, but probably not commercial uses. Neighborhood boulevards are distinguished from other streets within this typology by a planted median varying from 10 feet to 50 feet, depending upon whether the median includes just vegetation or internal walkways, decorative features (e.g., art, fountains), and sitting areas. If bike lanes are included, they would either add to the right-of-way width or replace the parking lane. Regardless of the specific combination of elements, neighborhood boulevards should be designed to provide a green, visually prominent, linear focus to an entire district.



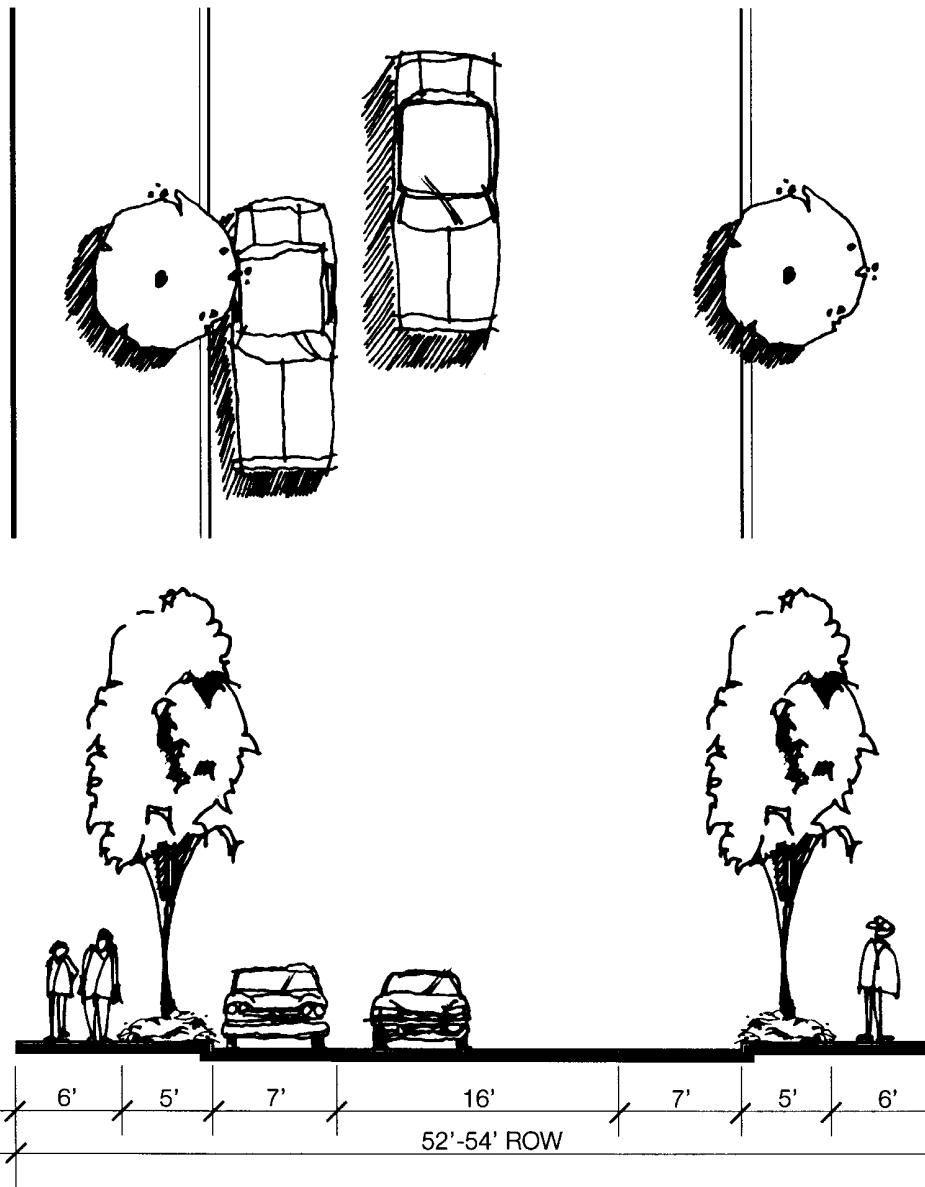
Neighborhood Shopping Street

This street is intended to provide for an intense, walkable, and pleasant environment for local shops, services, and restaurants. Adjacent uses are expected to front directly upon and be accessible by pedestrians from the sidewalk. Parking is not found in front of buildings, but rather behind them. Vehicular access does not interrupt the continuity of storefronts. Signs are scaled to pedestrians. Sidewalks contain a full complement of pedestrian-supportive elements, including street trees and pedestrian-scaled lighting, as well as other street furniture such as seating, waste cans, and phone booths. Planted medians may be included, but the planting should not obscure sight lines across the street.



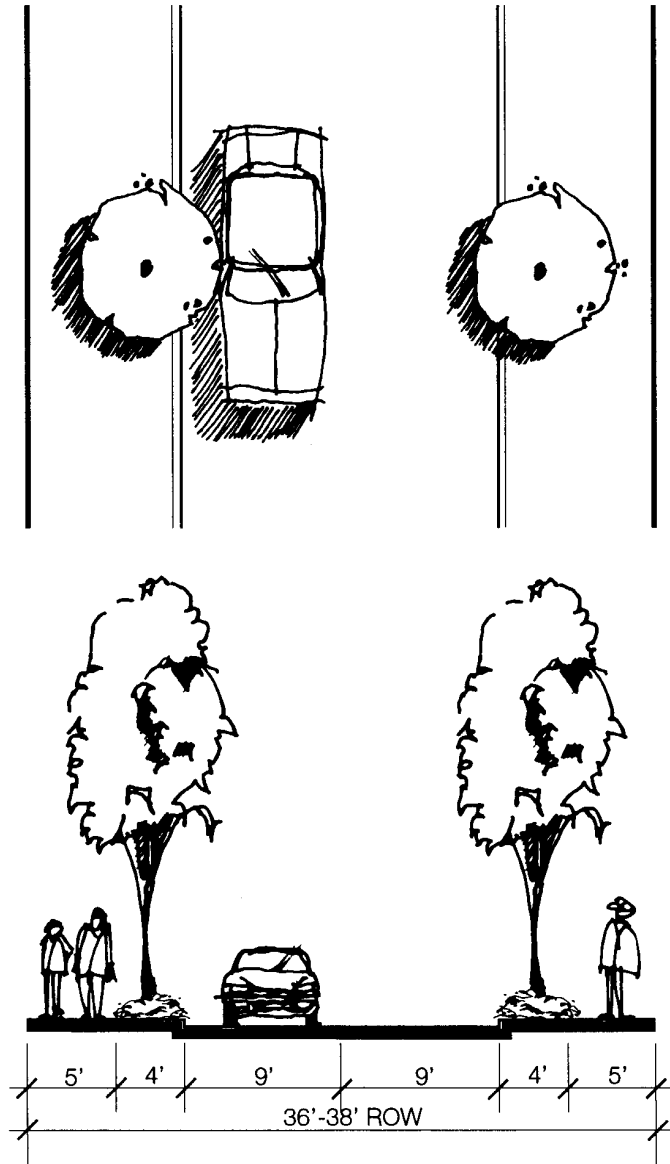
Residential Street

The majority of streets within an urban neighborhood would likely be of this type. However, other types of streets should be provided for variety. This street allows for free-flowing, two-way traffic, but on-street, parallel parking is present, which is intended to slow the speed of vehicles somewhat. Traffic calming would also be enhanced through the use of curb bulbs at intersections. Large street trees, green planting strips, and sidewalks should provide the dominant character of this type of street.



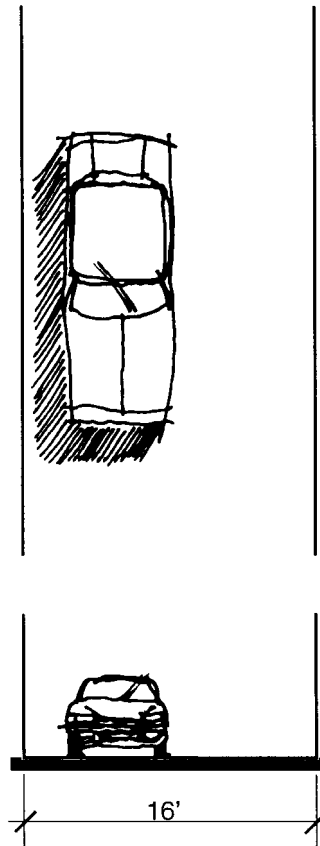
Residential Parking Street

This street reflects the type of street found in older parts of many cities: parking on one or both sides, with a wide, single through lane. It allows for the passage of emergency vehicles, but intentionally does not permit the free-flow of cars and trucks in both directions (i.e., one vehicle may need to pull aside to allow for an oncoming vehicles to pass). The intent is to create an environment in which pedestrian movement is emphasized and vehicles are moving relatively slowly. As with a residential street, large street trees, green planting strips, and sidewalks provide the character.



Residential Lane

This street is somewhat like a wide alley, but with residential structures fronting on it. It is very narrow and does not contain on-street parking. There may or may not be street trees. It is intended for limited application where there are small houses on small lots or townhouses. Within the overall street grid, this type of street would be an occasional exception to the pattern and would probably not be more than one or two blocks in length in any given location. It could also be configured in a "loop" or "u" form, where it returns to the principal through street.



Residential Alley

The alley in this typology is intended to serve as more than access to garages or surface parking. In commercial areas, small uses could have their primary pedestrian access from an alley. Larger uses could have a secondary pedestrian access. In residential areas, alleys could provide access to accessory dwellings, carriage units (over garages), or small, rear lot cottages. Emergency vehicles would have access, but normal, two-way traffic would be difficult. (Cars could pass each other, but only by moving very slowly.) Alleys typically involve no setbacks. An alley has inverted crowns with centerline drainage.

Street Type ¹	Horizontal Elements										Bike Lane
	Overall ROW	Number of Lanes	Lane ² Width	Planting Strip	Sidewalk Width ⁴	Parking Lane(s)	Curb Cuts ⁵	Corner Radius ⁷	Curb Bulbs	Raised Median	
Neighborhood Boulevard	80'-100'	1 lane each direction + turn pocket	11'	8' min.	8' min.	7'	No	25'	O.K.	yes	Optional (
Neighborhood Shopping Street	72' – 80'	1 lane each direction + turn lane	11'	4' min. ³	8' min.	7'	No ⁶	25'	O.K.	O.K	Part of the street
Residential Street	56 – 60'	1 lane each direction	10'	5' min.	6' min.	7'	12' max.	20'	O.K.	no	“
Residential Parking Street	54'	1 lane two directions	16'	5' min.	6' min.	7'	12' max.	15'	O.K.	no	“
Residential Lane	36'	1 lane each direction	9'	0'	9' min.	None	10' max.	15'	no	no	“
					--- or --- 4' min. 5' min.						
Residential Alley	16'	1 lane two directions	16'	N/A	N/A	N/A	N/A ⁸	N/A	N/A	N/A	“

¹American Society of Engineers (ASCE) Subdivision and Site Plan Standards Committee establish maximum design speeds of 20 m.p.h. and 25 m.p.h. for “access” and “subcollector” streets, respectively.

²Does not include 6” curb.

³May be continuous planting strip with trees or street trees in individual planting pits.

⁴Unobstructed pedestrian throughway, not including strip for planting and other vertical elements.

⁵Maximum depth of apron: no more than 4' (should not interrupt throughway of sidewalk).

⁶Vehicular access from cross street or alley.

⁷Should be based on anticipated traffic volumes, traffic type, and intersection traffic control devices.

⁸Garage entrances facing alley to be set back at least 2'.

Street Type	Vertical Elements ¹									
	Lighting Height	Lighting Spacing	Tree Spacing	Tree Size	Tree Base	Tree Guards	Street Signs	Utility Poles	Utility Boxes	Fire Hydrants
Neighborhood Boulevard	24' max.	80' max.	40' max.	3" cal min.	planting	no	2	3	4	300'
Neighborhood Shopping Street	20' max.	60' max	30' max.	3" cal min.	cast iron grates	yes	2	3	4	300'
Residential Street	18' max.	60' max	30' max	2" cal min.	plants, grates, or pavers	O.K.	2	3	4	600'
Residential Parking Street	18' max.	60' max	30' max.	2" cal min.	planting	no	2	3	4	600'
Residential Lane	12' max.	40' max.	if trees, 25' max.	2" cal. min.	if trees, grates or blocks	O.K.	2	3	4	600'
Residential Alley	N/A	N/A	N/A	N/A	N/A	N/A	2	3	4	600'

¹ All vertical elements to be located 3' to 4' feet from face of curb, always out of the pedestrian thoroughway of the sidewalk. Typically, this will be either within the planting strip or the zone occupied by street trees.

² Street signs shall be placed in accordance with the *Manual for Uniform Traffic Control Devices*.

³ Utility poles should be located to the rear of lots in alleys where alleys are provided.

⁴ Utility boxes should be neatly clustered near the rear of buildings. Screening is recommended where permitted.

E. Explanations of Terms Used in Urban Street Standards

Curb Cut

A curb cut is a technical term for a driveway to one or more individual developments. It involves the crossing of a sidewalk by a passageway for vehicles, either by the curb actually dropping to accommodate the movement or by the curb being rolled. Regardless, the design should give the visual effect of the sidewalk being continuous with the vehicular movement intruding across it, rather than the reverse. This involves using a number of elements, such as keeping the depth of the apron for the curb cut to a minimum (no more than four feet) and not interrupting the scoring or paving pattern of the sidewalk.

Curb Bulb

This is an alignment of the curb line that extends out toward the traffic lanes. Typically, it consumes the same width as a parking lane. It is done for the purpose of traffic calming and to produce a shorter distance for pedestrians to walk across lanes of traffic. However, because vehicles with longer wheel bases may need to turn at this location, the radius of the curb may need to be as much as 30 feet, so that their wheels do not jump the curb. Curb bulbs can often present difficulties with storm drainage. They cannot be used when parking lanes are also used for other purposes, such as peak hour traffic movement and bus stops.

Planting Pit

A planting pit is a rectangular pocket for the insertion of a root ball of a street tree. Current practices suggest that street trees need approximately 25 square feet of area to allow for water penetration and root aeration. This usually translates into a pit that is five feet by five feet or four feet by six feet. However, some sidewalk conditions are so constrained that four feet by four feet pits must be used.

Tree pits should have metal grates or paver blocks at the base of the tree, providing lower maintenance. In addition, the surface must conform to specifications of the Americans with Disabilities Act, meaning that the surface can be available for walking as a part of the sidewalk.

Planting Strip

A planting strip can be continuous or intermittent. In either case, it is located between the curb and the unobstructed thoroughway of the sidewalk, so that visual separation between pedestrians and vehicles is provided. This is also the zone in which all other vertical elements and street furnishings should be placed, so that there is an ensemble of pedestrian-supportive features arrayed along the sidewalk.

Raised Median

This is the center portion of a street that is raised and surrounded by a six-inch curb. It is planted with at least grass or ground cover and often trees and seasonal color. If located on a neighborhood shopping street, it could also contain pedestrian crossing areas at mid-block locations.

Unobstructed Pedestrian Thoroughway

This is a linear sidewalk zone that contains no vertical elements. Typically, pedestrians, especially those that are visually impaired, depend upon having this zone be continuous and straight so that they need not worry about tripping or bumping into objects.

II. Urban Subdivisions

A. State Law

Chapter 58.17 of the Revised Code of Washington (RCW) entitled Plats-Subdivisions-Dedications addresses the subdividing of land into developable parcels. This title enables counties and cities to adopt their own local ordinances regarding subdivisions. The chapter describes the review process and time restrictions for processing applications, but does not prescribe specific design standards. In the years following the passage of the Growth Management Act, many jurisdictions have adopted new subdivision codes to allow for greater density in certain areas while recognizing that there are other locations, such as critical areas, that warrant protection from development. Each jurisdiction is able to craft its own set of standards as long as the basic parameters established by state law are satisfied. This allows for a great deal of flexibility for communities to consider new standards such as those presented in this document.

B. The Purpose of These Model Code Provisions

The standards suggested in this document are intended to accomplish several objectives related to the form, diversity, and appearance of communities. These are:

To Encourage Infill and Reduce Sprawl

By providing smaller lots, increments of development can be more compact, more efficiently serviced, and consume less land than conventional development.

To Encourage Growth Near Services

Most communities already have established or are providing for infrastructure, schools, and other services in specific areas. The type of development called for in this document

allows jurisdictions to bring about development in close proximity to these public investments, making them more cost effective.

To Help Implement Community Plans

Most communities have adopted policies to direct the form of development into certain areas. These standards provide the means to help achieve a variety of public objectives.

To Strengthen Neighborhoods

Healthy, livable communities depend upon closely-knit places where people can know neighbors and feel that they have a degree of control over their surroundings. The form of development envisioned by these provisions re-establishes a traditional type of neighborhood that has been the foundation of American towns and cities for over 200 years.

To Encourage New Housing Choices

The demographic composition of our communities is changing. It is critical to recognize that households need a range of choices, depending upon their size, age, and income.

To Encourage Greater Affordability of Housing

Housing has become less and less affordable in part because of increasing sizes of both lots and structures. These provisions open up the possibility of adding smaller, more inexpensive types of homes, while still allowing for ownership.

C. Relationship to Other Codes and Standards

All communities have a variety of regulatory techniques that affect the form of development. Zoning ordinances, design guidelines, development standards, and special district regulations all shape development. The provisions set forth in this document

address only the two dimensional parcelization of land. It is important for jurisdictions to consider modifying or supplementing other standards to achieve the objectives outlined above. A number of suggestions are included in this document, although a more thorough investigation would be required.

D. Urban Subdivision Standards

Subdivision Type	Street & ROW	Max FAR ¹	Standards					
			Block Length		Alley	Lot Dimensions		
			Min.	Max.		Min. Size	Min. Width	Min. Depth
Small Lot Single-Family Detached	See Urban Street Standards	.5	200'	400'	yes	4000sf	40'	100'
Very Small Lot Single-Family Detached	See Urban Street Standards	.5	200'	300'	yes	2500sf	25'	100'
Attached Single-Family (Row House)	See Urban Street Standards	1.0	200'	200'	O.K.	1500sf	15'	80'

¹ Floor Area Ratio [interior area of habitable structure(s) as a multiple of lot area]. This standard, though unusual for subdivisions, ensures housing affordability and an appropriate intensity for smaller lots. Without a maximum FAR, development would be over-scaled and merely result in large, expensive houses on small lots. It would need to be a condition added to the face of the plat.

E. Other Standards Applicable to Urban Subdivisions

Lot Access Options

- Public Streets
- Common Easements
- “Flag” Appendages
- Private Streets and Lanes

Through-Block Easements

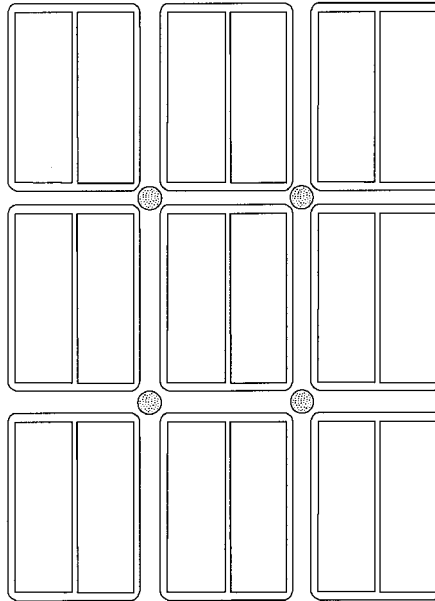
Recommended every 600'—1200' for pedestrian and bike trails.
Minimum width: 16'

Distance between Intersections

100' minimum

Public Spaces

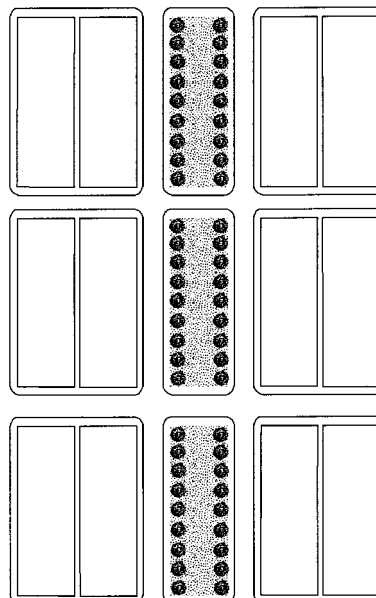
The form and design of public open space within urban subdivisions is very different from suburban or rural subdivisions. Rather than following natural features such as streams or steep slopes, or being “left over” after the best part of the property is divided into lots, urban open spaces are deliberately placed in key, prominent locations that can provide a sense of focus to the neighborhood surrounding them. Because people within urban subdivisions likely have smaller personal spaces available to them, the provision of common, public spaces is crucial to the livability of these places. Therefore, urban subdivisions should be designed to include one or more of the following types of spaces. It is recommended that approximately 15 percent to 25 percent of any development be devoted to these spaces.



Roundabout

Small: minimum inside diameter 30'

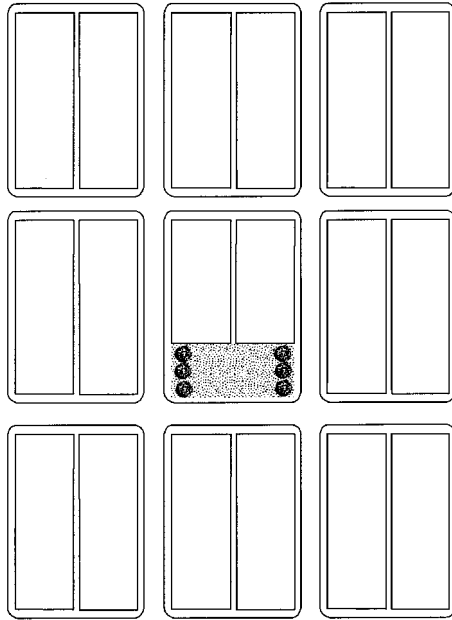
Large: minimum inside diameter 100'



Parkway

Linear greenway, bordered on both sides by streets

Minimum dimension of greenway: 60'



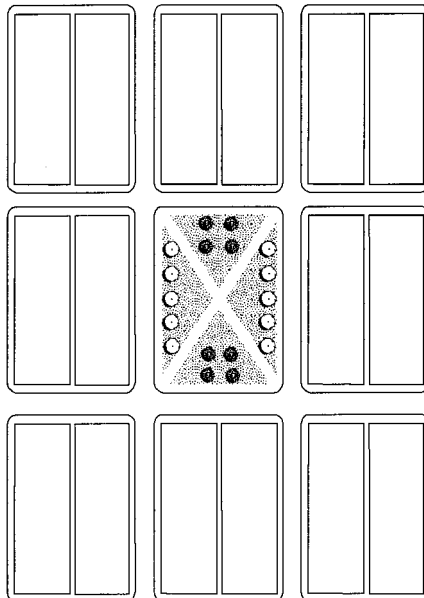
Residential Squares

Bordered by streets on at least three sides

May be square or rectangular

Minimum size: 10,000 s.f.

Minimum dimension: 80'

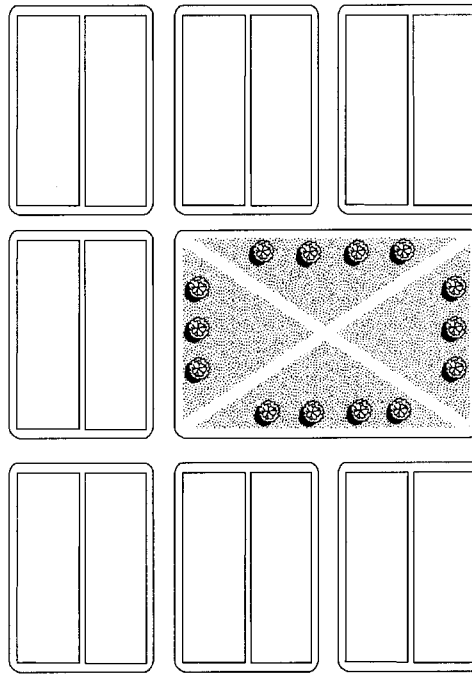


Park Block

Bordered by streets on all four sides

Minimum size: 20,000 s.f.

Minimum dimension: 100'



Village Green

Large, centrally located space

Bordered on at least two sides by streets

Minimum size: 40,000 s.f.

Minimum dimension: 150'

Infrastructure

Stormwater—Design of the stormwater management system must be consistent with state requirements, local masterplans, and local design guidelines. To the extent possible the facilities should reflect regional perspective rather than site-specific requirements. In addition to the normal concerns with the rapid conveyance of runoff from the site, the design should incorporate elements of water quality, natural storage, infiltration, and temperature control.

Detention facilities are required to reduce post-development flow rates to pre-development flow rates in order to reduce the impacts to downstream property. Typical detention facilities allow the replication of pre-development storm flow rates by metering or restricting the outflow and by providing storage volume for the water.

Retention facilities may be required to reduce the volume of surface water leaving the development when offsite conveyance or detention facilities are at capacity or where an increase in runoff volume would change flood levels. Retained water is infiltrated into the ground and/or does not leave the site.

Detention and retention ponds, as well as conveyance swales or creeks, should be designed as amenities to the development. They should be incorporated into the open spaces and be given a natural appearance. Often, however, stormwater facilities require a great deal of space not normally available in an urban setting. Public spaces, therefore, must be developed with multiple uses in mind, which should include stormwater facilities. Stormwater facilities could include underground storage vaults or pipe in conjunction with an at-grade feature/amenity.

Utilities

Potable Water—Each development needs a reliable source of water to meet domestic, commercial, and fire protection needs.

Development should be encouraged to take place where adequate public or community water supply systems exist. The development should be required to connect to such systems. In some cases, the development may be beyond a reasonable distance from the nearest existing system, and may have to develop new public water supplies. Reasonable distance should be in balance with cost of the connection and the ability of the project to amortize the cost of the extension. Approval of new sources is required from local and state agencies.

Sanitary Sewers—Development should be encouraged in sanitary sewer service areas served by publicly-operated wastewater treatment facilities meeting the requirements of the Washington State Department of Ecology. This would allow for denser development with less impact to the environment. Where connection to an existing system is impractical, a properly functioning sanitary sewer system may be an approved individual or community septic system. Where infiltration systems are being proposed, infiltration rates, distance from groundwater, and the size of the lots should meet the minimums of the approving agency.

Other Utilities—All other utility services such as electricity, telephone, and cable television should be installed in accordance with the service provider and franchise conditions.

F. Terms Used in Urban Subdivision Standards

FAR or Floor Area Ratio

The habitable, enclosed floor area of a building (or buildings) divided by the area of

the lot. Excluded from the definition are open porches, balconies and decks, parking garages, and carports.

G. Related Standards

Urban residential development is shaped not only by subdivision and street standards, but also in large part by land use regulations. Therefore, it is important to recognize that other regulations will need to be revised or added. Design guidelines should also be considered, although for single-family housing, they should be few in number. Regardless of whether they are found in regulations or guidelines, the following subjects should be addressed:

Building Setbacks

Maximum front yard setbacks should be established, either in addition to or instead of minimum setbacks. In order to produce an environment that is supportive of social communication, “eyes on the street,” and compact development, residential buildings should not be more than 20 feet from the front yard line. Porches, if desired, should be able to intrude into any front yard setback, perhaps to as close as five feet from the front property line. Keep in mind that there is no compelling reason to have a setback at all, as fire separation is provided by the street itself.

Side yard setbacks can be eliminated. Building codes now are detailed enough to establish setbacks under certain conditions. Setbacks were originally placed in zoning codes for fire prevention and to assure “light and air.” Building codes now do this and allow for sufficient flexibility. Zoning regulations are simply redundant.

Garage Locations

One of the elements that dominates many contemporary residential developments is the presence of garage doors. Frequently these are placed in a more important location than the front door. If this is not desired, there should be a standard or guideline that prevents them from being so prominent. For example, a standard could place garage doors behind the front façade a minimum of ten feet. A more extreme standard would prohibit garages from being visible from the street.

Raised First Floor

In many American towns and cities, it was common for residential buildings to have their first, principal floor positioned two feet to five feet above the level of the sidewalk. This allowed residents a view of activity in the street, but assured them privacy from passersby. It also allowed people sitting on porches to be roughly at the eye level of passersby, thus encouraging neighborly conversation. Therefore, it may be important to include a provision that addresses the placement of the first main floor level at a particular height above the street.

Driveways

Driveways can interrupt sidewalks and create the effect of an almost continuous curb cut. Standards should be included to require shared driveways and set the maximum widths of driveways along the sidewalk (e.g., 12 feet for residential, 20 feet for commercial).

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